

B.M. - # 114 Chiseled on center of N. Headwall for concrete box culvert, located on W. side of IL Rte. 159 in "Buff Truck outfitters" parking lot across from historical landmark "Catsup Bottle" Elev. 475.811

Existing Structure- The structure (structure No. 082-2023) is a triple cell concrete box culvert built in 1934 and extended twice on the downstream (east end in 1985 and 2001. The original structure has three cells at 6.0 ft. by 2.5 ft and is 85.4 ft long. The first extension is 21.8 ft and the latest extension is 26.2 ft long. Both extensions consist of three cells with the two outer cells at 6.25 ft by 5.1 ft and the center cell at 6.5 ft by 5.1 ft. Two concrete headwalls with wing walls are located at both the upstream and downstream ends. The culvert is at a skew of 59.6 degrees with the roadway.

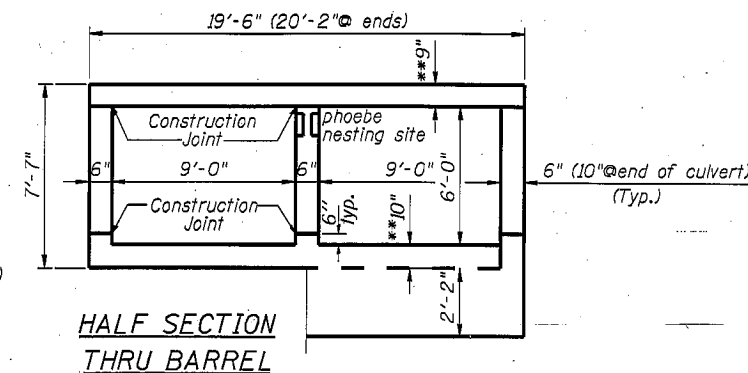
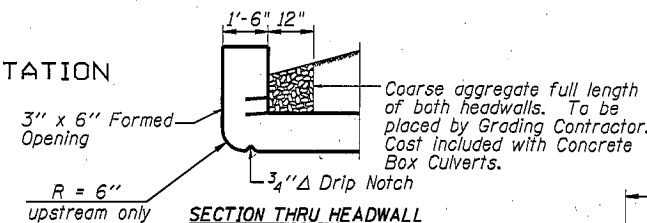
Existing culvert is to be removed and replaced.

Stage construction: One lane of traffic shall be maintained in each direction utilizing stage construction.

Precast alternate is not allowed.

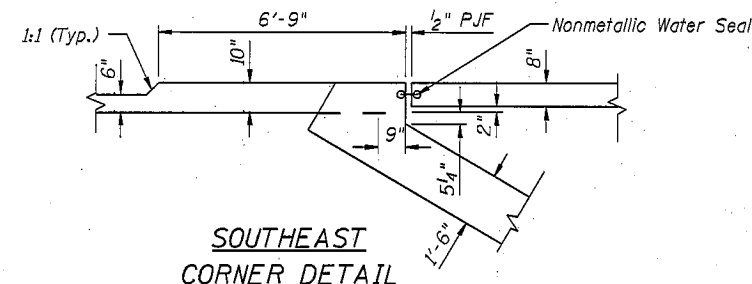
No Salvage-

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HALF END ELEVATION

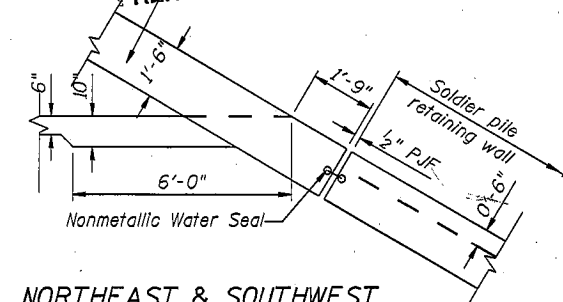
** slab thickness to be refined in final design



APPROVED

MAR 06 2009

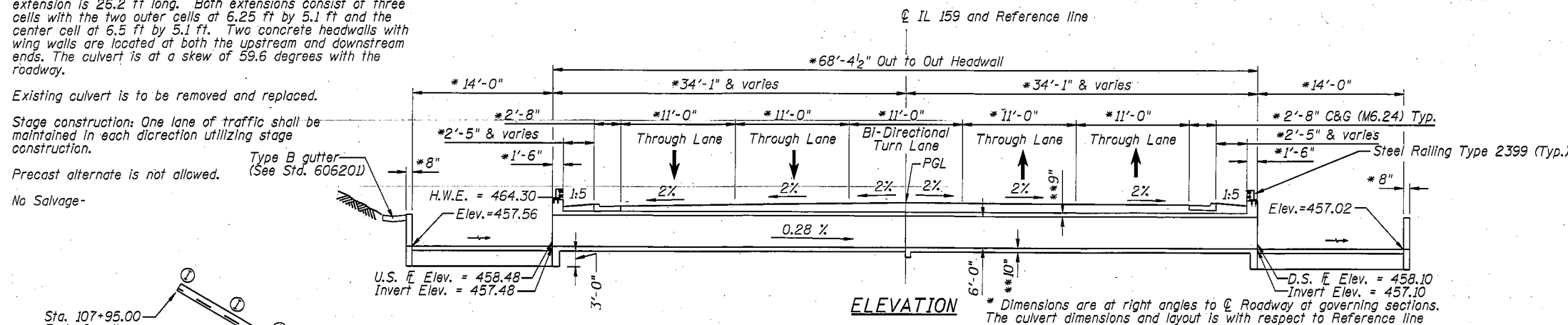
AS A BASIS FOR
PREPARATION OF DETAILED PLANS



NORTHEAST & SOUTHWEST
CORNER DETAIL

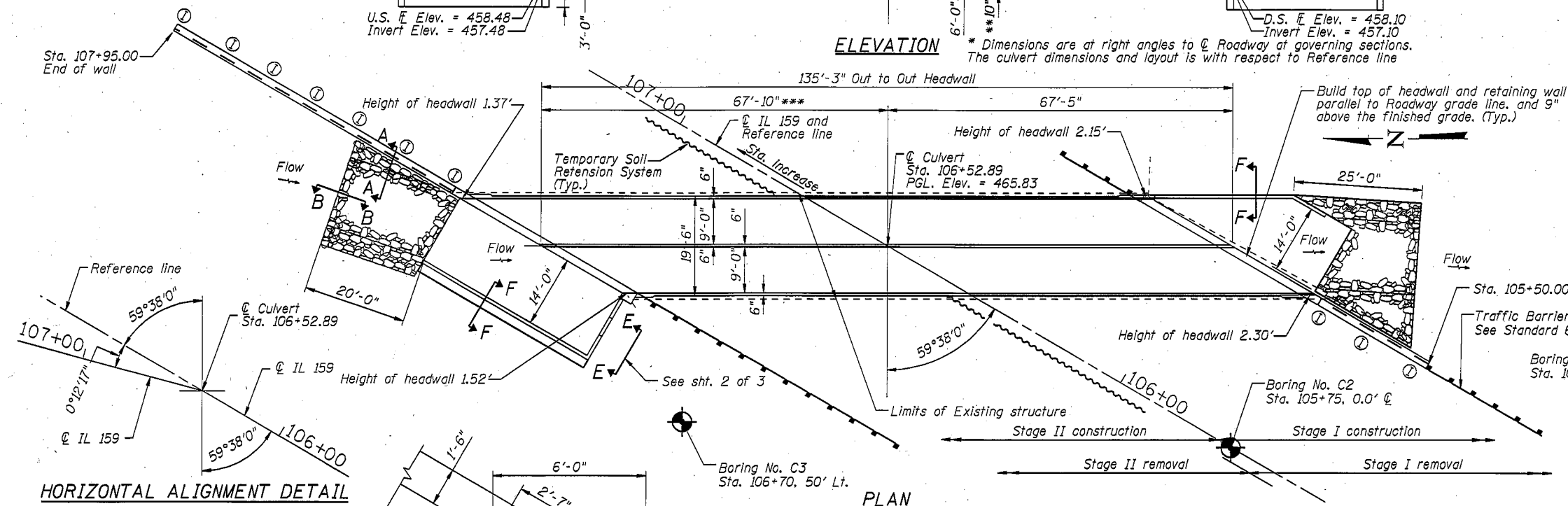
GENERAL PLAN

IL RTE. 159 OVER BRANCH OF CANTEEN CREEK
FAP ROUTE 600 (IL RTE 159)
STA. 106+52.89



ELEVATION

* Dimensions are at right angles to C Roadway at governing sections. The culvert dimensions and layout is with respect to Reference line



PLAN

LOADING HS20-44

Allow 50#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges

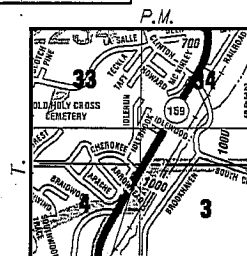
DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 36,000$ psi (M270, Gr.36) soldier piles.

HIGHWAY CLASSIFICATION

F.A.P. Route 600 (IL 159)
Functional Class: Other Principal Arterial
ADT: 20,100 (2002); 23,050 NB, 26,150 SB (2032)
ADTT: 5% (2002); 5% (2032)
DHV: 1920
Design Speed: 45 m.p.h.
Posted Speed: 45 m.p.h.



LOCATION SKETCH

PROPOSED CULVERT - R.

DESIGN SCOUR ELEV. TABLE

Design Scour	Upstream	Downstream
Elevation (feet)	454.48	454.10

HORIZONTAL ALIGNMENT DETAIL

*** The culvert headwall & wingwall on this side is built to accommodate the kink in Roadway

PROFILE GRADE LINE

Along C Roadway FAP 600 (IL 159)

WATERWAY INFORMATION

Drainage Area = 0.358sq. miles Low Grade Elev. 464.8 @ Sta. 109+50									
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater EL.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	50	632	45	90	464.3	3.0	2.50	467.3	466.8
Base	100	831	45	90	464.7	3.4	2.70	468.1	467.4
Overtopping	<10	293	45	90	463.4	2.2	1.90	465.6	465.3

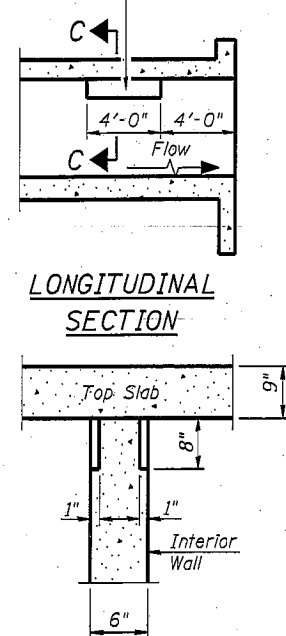
10 year Velocity through proposed culvert = 3.3'/sec. 10 year Velocity through existing culvert = 6.5'/sec.

DESIGNED - KRG
CHECKED - MJK
DRAWN - GSJ
CHECKED - MJK

SHEET NO. 1	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3 SHEETS	600	129R	St. Clair	3	1
STRUCTURE NO: 082-2044			CONTRACT NO.		
FED. ROAD DIST. NO. -			ILLINOIS FED. AID PROJECT		

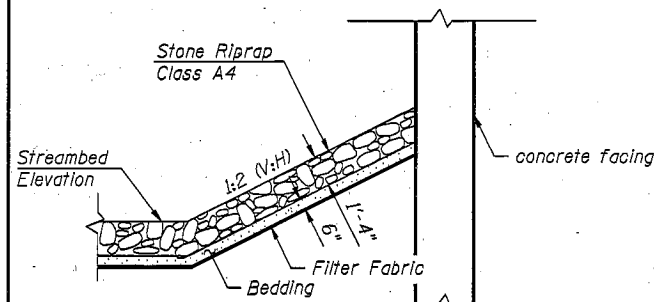
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Notch formed by rough finished board attached to and removed with formwork, each interior wall. (Do not chamfer).

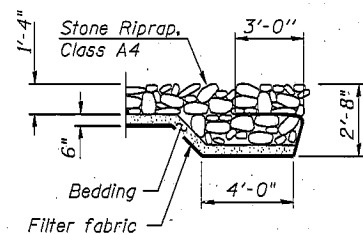


LONGITUDINAL
SECTION

SECTION C-C
PHOEBE NESTING
SITE DETAILS
(Downstream End Only)

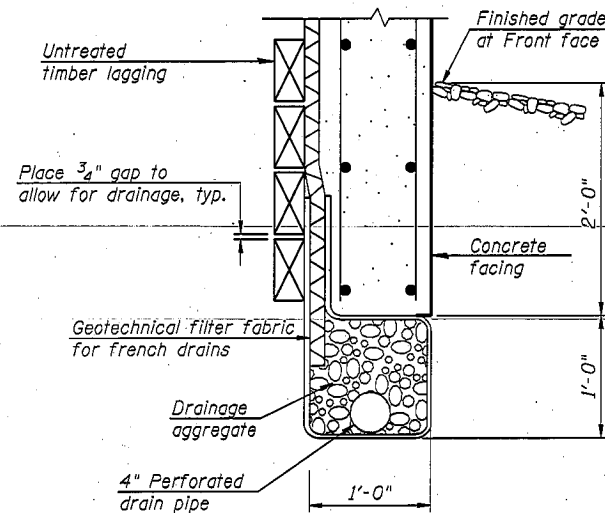


SECTION A-A

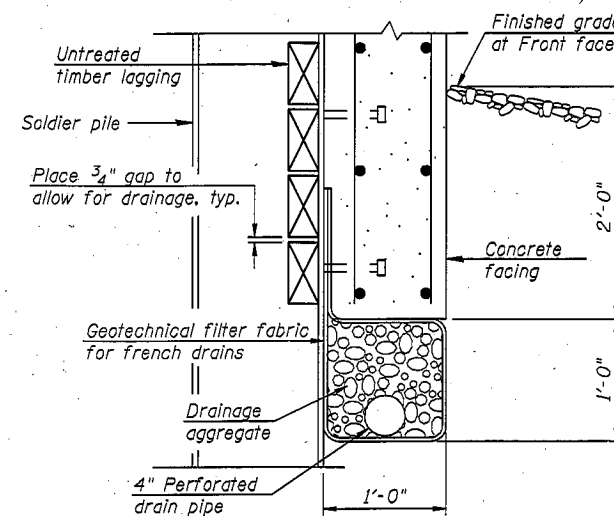


SECTION B-B

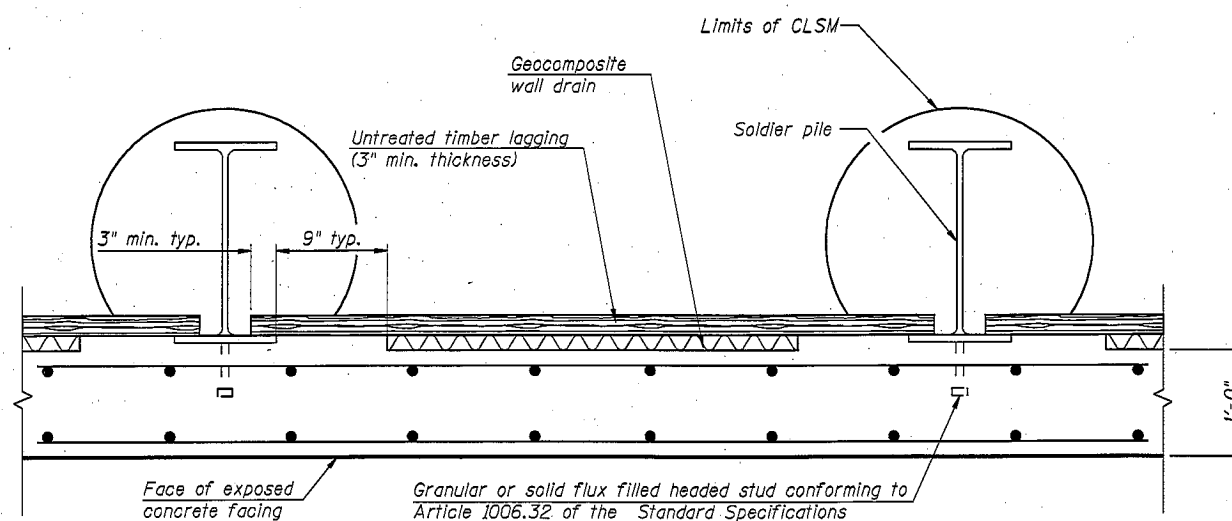
DESIGNED - KRG
CHECKED - MJK
DRAWN - GSJ
CHECKED - MJK



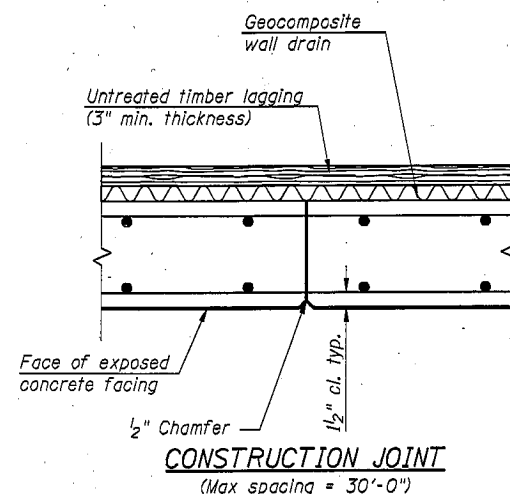
UNDER DRAIN DETAIL
BETWEEN SOLDIER PILES



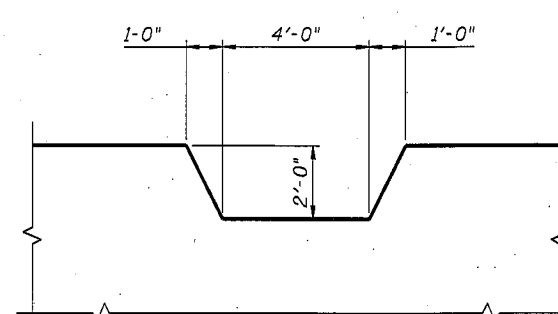
UNDER DRAIN DETAIL
AT SOLDIER PILES



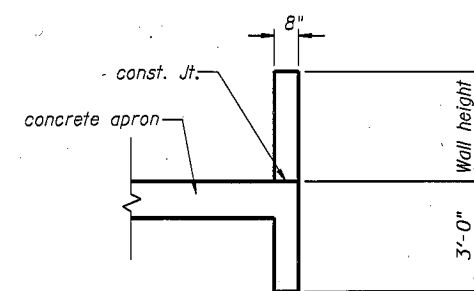
TYPICAL PLAN THROUGH WALL



CONSTRUCTION JOINT
(Max spacing = 30'-0")

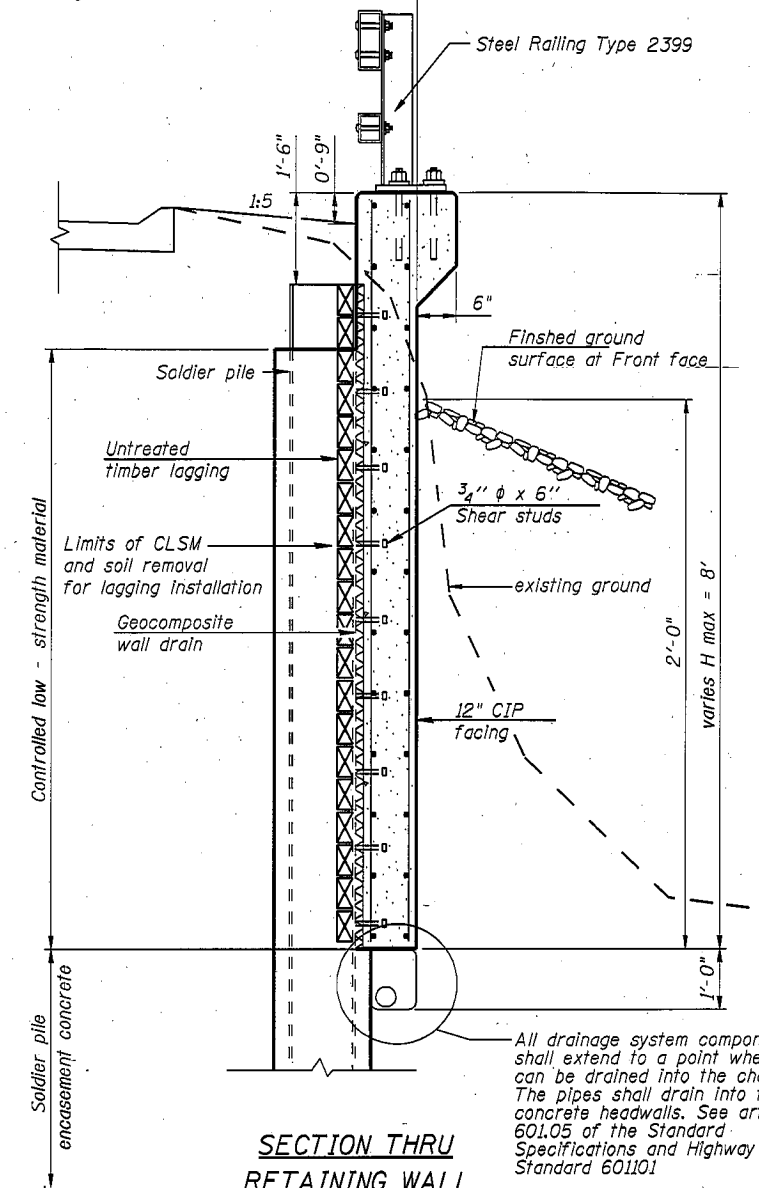


SECTION E-E



SECTION F-F

33'-7" @ Rt. angles to @ roadway (Southwest wall)
33'-9 1/2" @ Rt. angles to Reference line (Northeast wall)



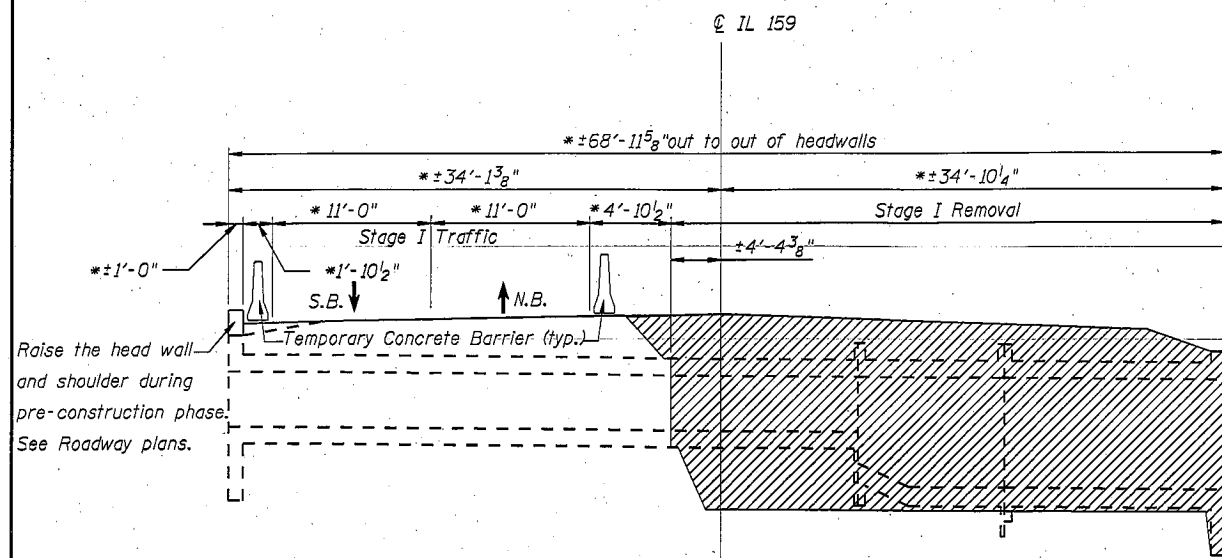
SECTION THRU
RETAINING WALL

Note: Pile section, tip elevation, spacing, the need of deadman anchor etc. are to be determined during final design.

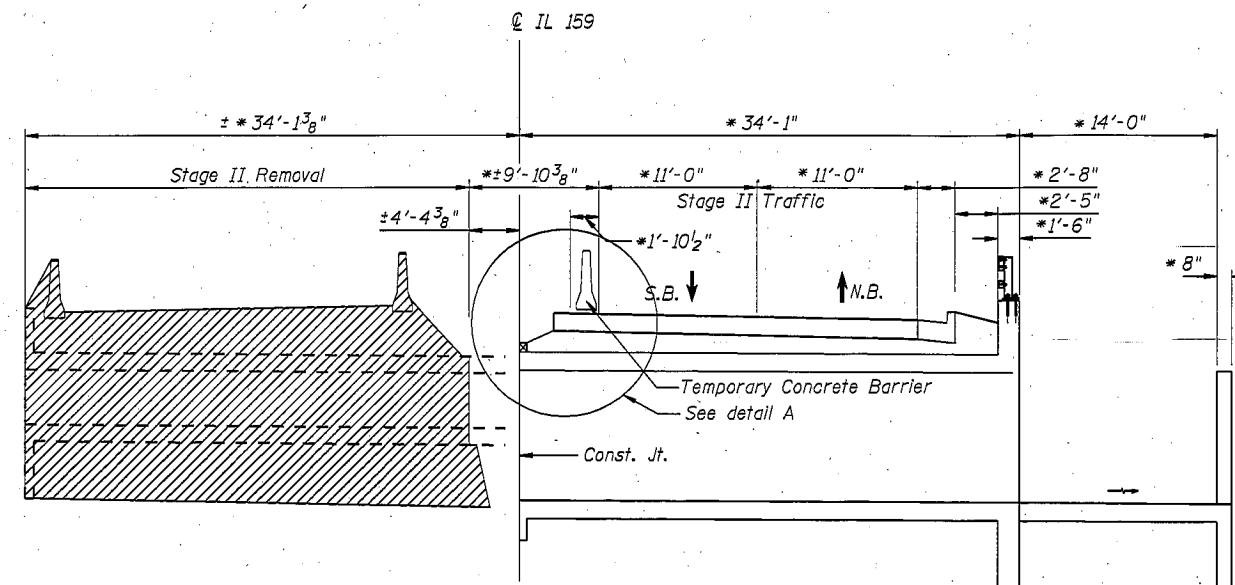
STAGE CONSTRUCTION DETAILS
IL RTE. 159 OVER BRANCH OF CANTEEN CREEK
FAP ROUTE 600 (IL RTE 159)
STA. 106+52.89

SHEET NO. 2	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3 SHEETS	600	129R	St. Clair	3	2
STRUCTURE NO: 082-2044 CONTRACT NO.					
FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



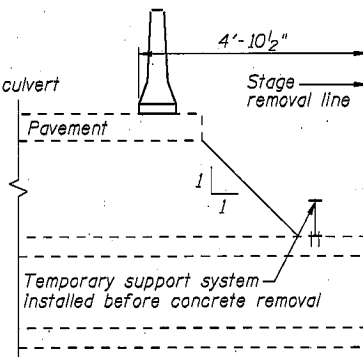
Note: Hatched area
Indicates limits of Removal



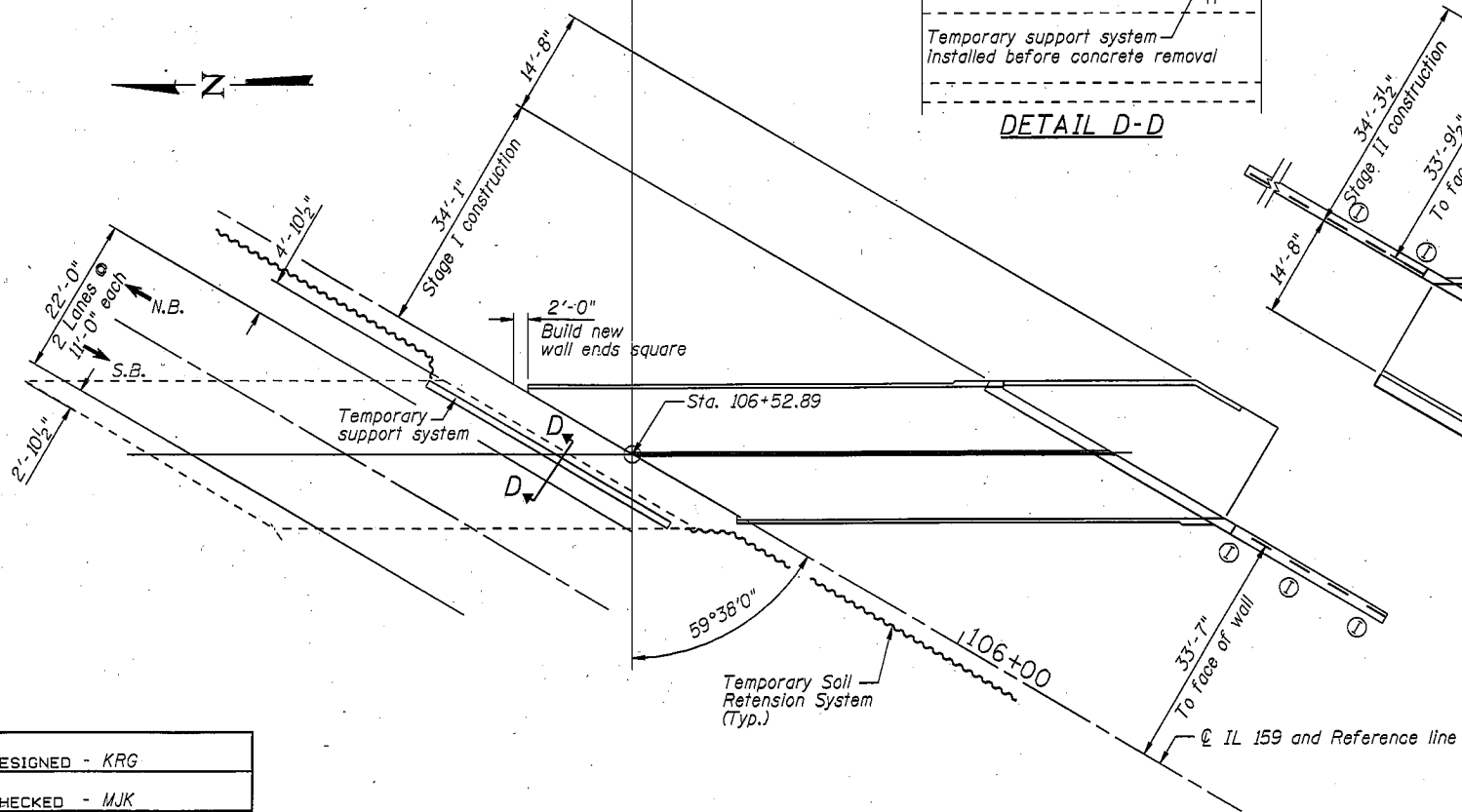
LONGITUDINAL SECTION

* Dimensions are at right angles to C Roadway Reference line at C culvert

STAGE I REMOVAL



DETAIL D-D



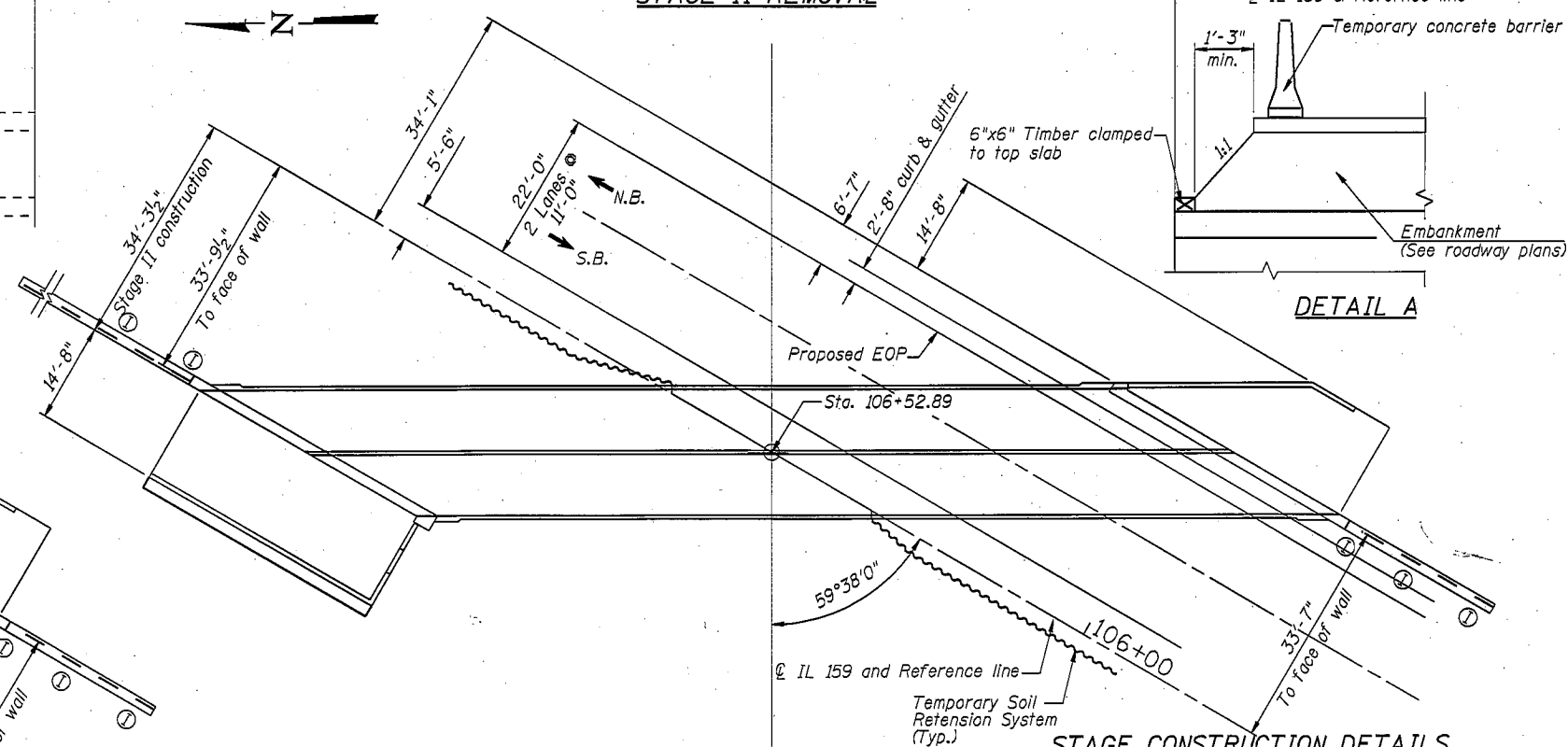
PLAN VIEW

STAGE I CONSTRUCTION

LONGITUDINAL SECTION

* Dimensions are at right angles to \odot Roadway Reference line at \odot culvert

STAGE II REMOVAL



DETAIL A

PLAN VIEW

STAGE II CONSTRUCTION

DESIGNED -	KRG
CHECKED -	MJK
DRAWN -	GSJ
CHECKED -	MJK

SHEET NO. 3 3 SHEETS	F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	600	129R	St. Clair	3	3
	STRUCTURE NO: 082-2044		CONTRACT NO.		
FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT					